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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CORRIELUS, JEAN B	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/787,432	SCHILLING ET AL.	
	Examiner	Art Unit	
	Jean B. Corrielus	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2004* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it is too short. Correction is required. See MPEP § 608.01(b).

Information Disclosure Statement

2. The specification cites several foreign patent and referred to at least one of them as forming part of the instant application, see for instance page 2, line 25. However, applicant did not provide a copy of any of such foreign patent(s). It is requested that a copy of each foreign patent mentioned in the specification be provided in response to this office action.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the combining unit and the control unit as recited in claim 1, the signaling means, as recited in claim 3, the second combining means, as recited in claim 4, the second pseudo-random generator as recited in claim 6, the unit for synchronizing, as recited in claim 8, the control unit as recited in claim 10, the switch-over between the short sequence and the long sequence, as recited in claim 11, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1-13 are objected to because of the following informalities: claim 1, lines 1-2 should be amended as follow:

"A data communication system, comprising:

a first unit, and

a second unit , wherein the first unit is configured to transmit digital signals to the second, the first unit comprising: "; line 13, "random data" should be replaced by "random values, in each occurrence so as to be consistent with antecedent; last line, "information data" should be replaced by "digital signals" for consistency. In addition, the claims, i.e., claims 1-13, should avoid the use of "passive form" "active form/tense" is preferred.

Claims 2-11, "Device" should be replaced by: "The data communication system", respectively; with respect to the limitation "random data" and "information data", see claim 1.

As per claim 3, see claim 2.

As per claim 4, see claim 2. In addition, "line 2, "signals" should be replaced by "values"; line 3, "or the random generator" should be inserted after "generator; line 4, "or random values" should be inserted after "data"

As per claim 5, see claim 4. Line 3, "can take place synchronously" should be replaced by "is synchronized". In addition, the claim should clearly recites what signal is combined with the random values.

Claim 6, see claim 4. "numbers" should be replaced by "values".

As per claims 7 and 8, see claim 4.

Claim 9, line 4, "and the second unit" should be inserted after "unit"; line 3, "single " should be deleted. what does it mean by "sequence is started". The claim does not set forth where the synchronization sequence originate.

Claim 10, see claim 4. "previously established" should be replaced by "predetermined or known". Line 7, "given" should be deleted.

As per claim 11, see claim 4.

As per claim 12, per the preamble, the claim is directed to a method claim. Method claims however recite a series of steps in the active tense. Claim 12 does not appear to include any steps. In addition, line 1, "Method" should be replaced by "A method". Claim 13, "Method" should be replaced by "A method"; line 3, "joined" should

be replaced by "coupled"; line 12, "random data" should be replaced by "random values, in each occurrence so as to be consistent with antecedent; last line, "information data" should be replaced by "digital information signals" for consistency.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3, line 4, "this signal" is vague and indefinite, because it is unclear as to what signal "this signal refers to.

Claim 10, line 4 "pseudo random generator" is vague and indefinite because it is not clear whether it represent the first or the second pseudo random generators; line 7, "the received data" lacks of proper antecedent basis; line 8, "the combination" is vague and indefinite because it is not clear as to what combination such limitation refers to.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 4, 6, 12, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Stewart US Patent No. 5,592,555.

As per claim 1, Stewart teaches a method and apparatus fig. 1 and fig. 2 for transmitting digital signals from a first unit 12 to a second unit 14, the first unit 12 comprising: a data transmitter for emitting the digital signals 54; a pseudo random-generator or a random generator 70 for generating pseudo random values or random values, respectively, see col. 5, lines 34-36 and a combining unit 66 for combining the signals emitted by the data transmitter 54 with the pseudo random values or the random values (see output of FIFO 70); and the second unit 14 comprising: a data receiver 54 (note that 34 has same configuration as 16, because the parts are the same) connected to the data transmitter 54 by a transmission path (wireless channel), for receiving the digital signals; wherein a control unit 52 see col. 5, lines 26-31 is provided for controlling the combining unit in such manner that pseudo random data or random data are transmitted during intervals between periods for transmitting information data see fig. 4.

As per claim 4, Stewart teaches that, wherein the combining unit 66 is adapted to continuously combine information signals to be transmitted with signals of the pseudo random generator 70, and a second combining unit 78 (part of circuit 34) is provided in the second unit 14 for also combining received signals with pseudo random data.

As per claim 6, a pseudo random generator similar to the 70 is included in circuit 34 since the 34 and 16 include similar circuit configuration.

As per claim 12, Stewart teach a method for transmitting digital signals between a plurality of units (12 and 14) of which at least one first unit (12) comprises a data

transmitter 54 and at least one second unit (14) comprises a data receiver (54), and the at least one first unit is connected by at least one transmission path to the at least one second unit see fig. 1 (wireless channel); wherein true or pseudo random data are inserted between information data, so that in a spectrum of a signal to be transmitted, gaps between spectral lines are substantially reduced, so that amplitudes of the spectral lines fall off, however without an entire bandwidth needed for transmission being substantially increased see fig. 4. .

As per claim 13, see claim 1.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart US Patent No. 5,592,555.

As per claim 2, as applied to claim 1 above, Stewart teaches every feature of the claimed invention but does not explicitly teach a signaling line is provided between the data transmitter and the data receiver to signal the presence of data to the receiver. However, it is well known in the art to notify a receiving entity that signal is being transmitted using a control signal line. Given that fact, it would have been obvious to one skill in the art to incorporate a control line in Stewart to transmit a control signal from a transmitting unit to a receiving unit to indicate that the data is being transmitted

to the receiving unit in so as to provide the receiving unit with the proper timing as to when to commence signal processing in order to retrieve original signal.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart US Patent No. 5,592,555 in view of Szymanski US Patent publication No. US 2002/0053062A1.

As per claim 3, as applied to claim 1 above, Stewart teaches every feature of the claimed invention but does not explicitly teach the data receiver has a signaling means for requesting information data from the data transmitter and the data transmitter is adapted to send information data in response to this signal. Szymanski teaches a data receiver has a signaling means for requesting information data from the data transmitter and the data transmitter is adapted to send information data in response to this signal see paragraphs 35 and 36. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Stewart in order to provide the system with the capability to minimize signal transmission error through retransmission.

12. Claim 5, 7, 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart US Patent No. 5,592,555 in view of Jewett US Patent No. 5,793,318.

As per claim 5, as applied to claim 1 above, Stewart teaches every feature of the claimed invention but does not explicitly teach an additional transmission path for transmitting the pseudo-random data is provided so that at the second unit a combination with the pseudo random data is synchronized with a combining with the pseudo random data at the first unit. Jewett teaches an additional transmission path 34 for transmitting the pseudo-random data 34 is provided so that at the second unit fig. 2

a combination 29 with the pseudo random data is synchronized with a combining 18 with the pseudo random data at the first unit fig. 1. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Stewart so as to enhance signal detection.

As per claim 7, note that Jewett teaches fig. 3an additional transmission path for synchronizing the first PN generator and the second PN generator. It would have been obvious to one skill in the art to incorporate such a teaching in Stewart in order so as to ensure that both PN generators produce the same sequence to allow reconstruction of the original signal.

As per claim 8, Jewett teaches a unit 42 to synchronize both PN generators. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Stewart and the motivation would have been the same as provided with respect to claim 7.

As per claim 9, Note that it is well known that prior to transmitting data from one station to another station, signal synchronization is first established between the stations communicating. Given that fact, it would have been obvious to one skill in the art to send a sync sequence prior to signal transmission so as to synchronize the pseudo random generators so as to allow both units to be able to communicate, allow the receiver to be able to decode the signal transmitted by the transmitter.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart US Patent No. 5,592,555 in view of Jewett US Patent No. 5,793,318 further in view of Ooi et al US patent No. 5,007,088.

As applied to claim 10 above, Stewart and Jewett disclose every feature of the claimed invention but does not explicitly teach the additional limitations wherein for the synchronization sequence, the data transmitter is adapted to emit a previously established bit pattern which is then combined with pseudo random values of the pseudo random generator of the first unit by the combining unit connected on an output side of the pseudo random generator; and a control unit of the data receiver is adapted to perform at various times a synchronization of the pseudo random generator of the second unit with the received data until a known given transmission pattern occurs as a result of the combination. Ooi et al teaches limitations wherein for the synchronization sequence, the data transmitter fig. 1 is adapted to emit a previously established bit pattern (unique word, see output of circuit 5) which is then combined with pseudo random values of the pseudo random generator 9 using gate 10 of the first unit fig. 1 by the combining unit 10 connected on an output side of the pseudo random generator 9; and a control unit 22 of the data receiver is adapted to perform at various times a synchronization of the pseudo random generator 25 of the second unit fig. 3 with the received data until a known given transmission pattern (unique word) occurs as a result of the combination. It would have been obvious to one skill in the art to incorporate such a teaching in Stewart and Jewett in order to allow valid scrambling/descrambling of data to occur immediately following the establishment of frame synchronization to prevent a substantial amount of data loss as taught by Ooi see col. 1, lines 34-38.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart US Patent No. 5,592,555 in view of Jewett US Patent No. 5,793,318 further in view of

Ooi et al US patent No. 5,007,088 further in view of Van der Gracht et al US patent No. 4,835,517.

As applied to claim 10 above Stewart Jewett and Ooi teach the invention as claimed but does not teach the limitations of "wherein for simplified synchronization between the data transmitter and the data receiver, a short pseudo random sequence is used at first, and after a given period of time, or after a synchronization with this random sequence, a switch-over is made to a longer pseudo random sequence". However, as evidence by Van Der Gracht et al, it is well know in the art to use a first short code sequence and a second long code sequence see col. 1, lines 62-66. Given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Stewart, Jewett and Ooi in order to acquire and maintain code synchronization between the receiver and transmitter so as to reduce error rate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jean B Corrielus
Primary Examiner
Art Unit 2611

4-25-07